

ABSTRACT

Several neurodegenerative diseases result from the aggregation of polyglutamine repeat proteins into insoluble neuronal intranuclear inclusions. The invention provides methods with which to study the processes of these diseases, including methods for solubilizing polypeptides containing a polyglutamine repeat sequence, for storing these polyglutamine polypeptides and inhibit their spontaneous aggregation, for making the aggregates of polyglutamine polypeptides, for assaying the extension of existing polyglutamine aggregates, for determining the ability of a chemical compound to inhibit aggregation, and for inhibiting aggregation of polyglutamine polypeptides. The invention further provides materials with which to study these diseases including a synthetic aggregate that have a capability to recruit additional monomeric polyglutamine polypeptides and chemical compounds that inhibit the formation and/or extension of polyglutamine aggregates.